What is claimed is:

1. A perpendicular magnetic recording medium including a substrate and a magnetic layer formed on the substrate, said magnetic layer comprising multilayer superlattice films of ferromagnetic metal layers which contain Co and paramagnetic metal layers which consist of Pd and/or Pt, wherein said ferromagnetic metal layers further contain a paramagnetic element and the thickness of said paramagnetic metal layers is 0.8 nm or less.

2. A perpendicular magnetic recording medium including a substrate and a magnetic layer formed on the substrate, said magnetic layer comprising multilayer superlattice films of ferromagnetic metal layers which contain Co and paramagnetic metal layers which consist of Pd and/or Pt, wherein the rate of decrease in coercivity of said magnetic layer, if exposed to extreme temperature change, shall be less than 0.15 when said rate is evaluated by formula: H_c at 25 degrees Celsius - H_c at 70 degrees Celsius/H_c at 25 degrees Celsius, where H_c is the coercivity of said magnetic layer.

3. A perpendicular magnetic recording medium including a substrate and a magnetic layer formed on the substrate, said magnetic layer comprising multilayer superlattice films of ferromagnetic metal layers which contain Co and paramagnetic metal layers which consist of Pd and/or Pt, wherein, when a magnetic torque loop

of said perpendicular magnetic recording medium is measured with a torque magnetometer, the polarity of a value of loop components with translational symmetry of 90 degrees is opposite to the polarity of a value of loop components with translational symmetry of 180 degrees.

4. The perpendicular magnetic recording medium according to claim 1, wherein said magnetic layer consists of magnetic grains which are relatively dense and magnetic grain boundaries which are relatively sparse and surround the magnetic grains.

5. The perpendicular magnetic recording medium according to claim 2, wherein said magnetic layer consists of magnetic grains which are relatively dense and magnetic grain boundaries which are relatively sparse and surround the magnetic grains.

6. The perpendicular magnetic recording medium according to claim 3, wherein said magnetic layer consists of magnetic grains which are relatively dense and magnetic grain boundaries which are relatively sparse and surround the magnetic grains.

7. The perpendicular magnetic recording medium according to claim 1, wherein a M-H slope parameter α that corresponds to reversal of magnetization in an M-H loop, falls within a range of 0.5-2.0.

8. The perpendicular magnetic recording medium according to claim 2, wherein a M-H slope parameter α that corresponds to reversal of magnetization in an M-H

loop, falls within a range of 0.5-2.0.

9. The perpendicular magnetic recording medium according to claim 3, wherein a M-H slope parameter α that corresponds to reversal of magnetization in an M-H loop, falls within a range of 0.5-2.0.

10. The perpendicular magnetic recording medium according to claim 2, wherein said ferromagnetic metal layers further contain a paramagnetic element and the thickness of said paramagnetic metal layers is 0.8 nm or less.

11. The perpendicular magnetic recording medium according to claim 3, wherein said ferromagnetic metal layers further contain a paramagnetic element and the thickness of said paramagnetic metal layers is 0.8 nm or less.

12. The perpendicular magnetic recording medium according to claim 1, wherein said ferromagnetic metal layers contain at least one of the paramagnetic element selected from the group consisting of Pt, Pd, Au, Ag, Ru, and Cu.

13. The perpendicular magnetic recording medium according to claim 2, wherein said ferromagnetic metal layers contain at least one of the paramagnetic element selected from the group consisting of Pt, Pd, Au, Ag, Ru, and Cu.

14. The perpendicular magnetic recording medium according to claim 3, wherein said ferromagnetic metal layers contain at least one of the paramagnetic element

selected from the group consisting of Pt, Pd, Au, Ag, Ru, and Cu.

15. The perpendicular magnetic recording medium according to claim 1, further including a seed layer between said substrate and said magnetic layer, wherein said seed layer is a composite layer comprising an oxide layer and a metal layer which has a face-centered cubic lattice or a hexagonal close packed lattice.

16. The perpendicular magnetic recording medium according to claim 2, further including a seed layer between said substrate and said magnetic layer, wherein said seed layer is a composite layer comprising an oxide layer and a metal layer which has a face-centered cubic lattice or a hexagonal close packed lattice.

17. The perpendicular magnetic recording medium according to claim 3, further including a seed layer between said substrate and said magnetic layer, wherein said seed layer is a composite layer comprising an oxide layer and a metal layer which has a face-centered cubic lattice or a hexagonal close packed lattice.

18. The perpendicular magnetic recording medium according to claim 15, where said seed layer is a metal layer or an alloy layer containing at least one element selected from the group consisting of Au, Ag, and Ru.

19. The perpendicular magnetic recording medium according to claim 16, where said seed layer is a metal

layer or an alloy layer containing at least one element selected from the group consisting of Au, Ag, and Ru.

20. The perpendicular magnetic recording medium according to claim 17, where said seed layer is a metal layer or an alloy layer containing at least one element selected from the group consisting of Au, Ag, and Ru.